Nightmare Dreams and Nightmare Confabulations

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SPONTANEOUS AROUSALS with reports of mental content accompanied by anxiety can occur at any time of night and from all stages of sleep.[1] Such arousals can be classified[2] into four subtypes distinguishable by electroencephalographic (EEG) criteria: (A) stage 4 night terrors; (B) rapid eye movement (REM) nightmares; (C) stage 2 awakenings, and (D) hypnagogic nightmares. The night terror is the most severe type of nocturnal anxious arousal. This type of nightmare arises from stage 4 sleep and is characterized by cataclysmic panic with intense vocalization or screams;[1] these are relatively infrequent in the general population, and most frightening arousals subjectively experienced as nightmares occur in REM sleep and are much less intense than the night terror.[3] Arousals associated with anxiety that have been observed during stage 2 sleep are of somewhat greater intensity than the typical REM anxiety dream, but considerably less severe than the night terror.[3] Hypnagogic nightmares are anxious arousals arising from sleep onset stage 1 or from stage 1 later at night.[4]

The fundamental feature in all descriptions of the nightmare[5] is terror, overwhelming in intensity, that accompanies the dream images. Psychophysiologic investigations[1,3,4,6-10] have provided some information regarding the correlations between the psychologic experience of these frightening dreams and the concomitant physiologic states and processes. Broughton[4,6] discovered that adult nightmares (incubus attacks) usually occur during arousal from stage 4 slow-wave sleep, either in the first or second sleep cycle. Also, withdrawal from addiction to alcohol[11] or drugs such as amphetamines and barbiturates,[10,12] which may suppress REM time during chronic use, is followed by an increased percentage of REM sleep and nightmares.

The detailed nature of dream content associated with nightmares has not been extensively examined. Fisher et al.[1-3] have studied the mental content of night terrors and performed some preliminary comparisons[1,8] with mentation obtained from REM nightmares. The recall of distinct mental content for night terror arousals was 58%, approximating that reported in nonspontaneous stage 3 or 4 awakenings.[13] Of six subjects who reported content from three or more night terrors,[1] four included the laboratory in more than half of them. Among the most frequent categories of manifest content were aggression by personnel in the sleep

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laboratory, choking, or swallowing electrodes and wires. It was observed[1,3] that the psychic content associated with the night terrors was coherent, psychodynamically organized, and related to the subjects' REM anxiety dreams of the same night; eleven subjects had 22 spontaneous awakenings (with dream content) from REM sleep[1,8] in which mild to moderate anxiety was manifest.

Many of the subjects studied by Fisher et al.[1] reported experiencing severe nightmares at home, with screaming and vocalization, that were much less intense in the laboratory. This was attributed to the presence of someone in communication or contact with the subject, reducing the separation anxiety that presumably exerts an important influence on nightmares.[1] Thus, for both night terrors[14] and nightmares the laboratory appears to be a factor affecting the reported content.[15-17]

In only one investigation[18] was the thematic content of spontaneously recalled nightmares systematically examined. Content analysis was performed on retrospective nightmare reports of 21 male and 49 female college students and were compared to a control series of ordinary dreams. Not unexpectedly, the control dreams contained fewer "catastrophic" themes. By having the subject report a nightmare quite long after it actually transpired, portions of the content must undoubtedly be distorted or forgotten and the content quite likely contaminated by intervening daytime experiences.

The studies concerning nightmare themes are primarily descriptive[19] and based largely on clinical experience and case examples of patients in psychoanalysis or psychotherapy.[5] For example, many of the subjects with REM nightmares studied by Fisher et al[1] were in remission from schizophrenic psychosis or were considered to be quite emotionally disturbed. Nightmares are conceived as naturally occurring events that transpire infrequently in normal subjects.[5] Previous studies, then, have not been of nightmares in general, but rather within the specific situation of the sleep laboratory[3] and limited to subjects for whom nightmares were frequently recurrent experiences.[2,18] Therefore, the present study endeavored to provide normative data on nightmare themes based upon a more representative sample of dreams and a wider spectrum of content dimensions than has hitherto been investigated. Hereafter, "nightmare" will be used as a general term[20] describing any spontaneous awakening or disruption from sleep associated with anxiety.

MATERIALS AND METHODS

Subjects

The subjects were 12 male and 30 female university students selected from a group of respondents to a sleep inventory. On the basis of their response to one of the questionnaire items,[21] persons who reported experiencing nightmares once per month were asked to contribute a dream and a nightmare recalled spontaneously from nocturnal sleep under nonlaboratory conditions.

Procedure

Subjects were contacted individually and requested to write down the next dream recalled at home after an habitual uninterrupted night of sleep, and the next nightmare defined as a frightening dream that awakened them.[19] Subjects were instructed to record the dream as soon as possible after awakening, and the nightmare immediately after its occurrence. One of each type of dream was collected per subject. Subjects were told that the intent of the study was to investigate the linguistic content associated with mental activity during sleep, and were paid $2.50 for participation.

Since confabulated dreams are fairly easy to recognize,[22] a quasi-control devised by Orne[23] to assess the effect of "demand characteristics"[24] was used to detect any possible response sets or other artifacts that in this study were apt to appear in the nightmare reports. There was a nightmare demand characteristics treatment, intended to control for conscious role playing or unconscious influence by the instructional set given to the actual experimental subjects. Forty-two subjects (matched on the basis of age and sex with the others) had the procedure of the study explained to them and were asked to construct an imagery nightmare without using any segments from previously recalled nightmares or dreams.[25] The dreams were coded and scored blindly by an experienced scorer using some of the Hall-Van de Castle[26] content analysis scales. Scorer reliability has been shown to be satisfactorily high for the content categories assessed in this study.[26,27] Since the incidence of the various content analysis dimensions may be affected by dream report length, previously recommended procedures[28] were followed to control for this.

RESULTS

Two-tailed values of the sign test[29] were used for testing the significance of the difference between the nightmares and dreams. The unit of analysis was the dream pair for each subject. The two dreams were compared with each other on the various content dimensions, and the one scoring higher on a given variable was designated with a plus and the other dream with a minus. When two dreams did not differ on a dimension, they were both designated with an equal sign (Table 1). Although in certain respects the dreams and nightmares were quite alike, statistically significant differences existed between them. Table 1 shows the content scales and subscales to which the main statistical analysis was applied. Dreams recalled from uninterrupted sleep contained more friendly interactions ($p = 0.03$), less apprehension ($p = 0.001$) as the most frequent emotion, and fewer misfortunes ($p = 0.044$) as the most frequent theme, than in nightmares. Compared to the dreams, nightmares had greater proportions of aggressive interaction ($p = 0.002$), physical activity ($p = 0.025$), descriptive elements of color and institutional-residential-vocational settings (all $p = 0.03$), and more castration anxiety, ($p = 0.034$). Whereas eight of the dreams contained content that was scored on

Table 1. Number of Nightmares Containing Greater (+), Less (−) and Equal (=) Items of Content Compared to Dreams

Content Variable	+	−	=	*p*
Aggression	21	9	12	0.002
Friendliness	4	14	24	0.03
Apprehension	21	3	18	0.001
Castration anxiety	17	6	19	0.034
Misfortune	18	7	17	0.044
Color	21	8	13	0.03
Intensity	10	13	19	NS
Word length	18	24	–	NS
Activities: auditory/visual	16	20	4	NS
Movement	18	20	4	NS
Physical	27	12	3	0.025
Verbal	12	16	14	NS
Characters: animals/creatures	11	7	24	NS
Family members	17	11	14	NS
Strangers	8	14	20	NS
Settings: indoor	19	11	12	NS
Institutional, residential and vocational	14	4	24	0.03
Unfamiliar	10	9	23	NS

NS, not significant.

Table 2. Number of Nightmares and Confabulated Nightmares With Scorable Dream Content Items Above and Below the Median

	Nightmares		Imaginary Nightmares		
Content Variable	Below	Above	Below	Above	p
Aggression	6	16	14	2	0.01
Friendliness	8	8	2	0	0.01
Apprehension	17	7	14	7	NS
Castration anxiety	4	16	5	7	NS
Misfortune	7	14	17	7	0.01
Color	11	18	12	6	0.05
Intensity	4	12	10	3	0.01
Word length	32	10	9	33	0.001
Activities: auditory/visual	12	17	16	9	NS
Movement	13	24	23	9	0.01
Physical	16	17	8	7	NS
Verbal	11	16	9	5	NS
Characters: animals/creatures	4	8	10	2	NS
Family members	9	8	8	3	NS
Strangers	3	11	6	2	NS
Settings: indoor	17	17	23	5	0.02
Institutional, residential and vocational	6	9	4	2	NS
Unfamiliar	15	21	13	14	NS

NS, not significant.

the "happiness" dimension, this was the case for only one of the nightmare dreams ($p = 0.04$).

The median test and Fisher exact probability test were employed to statistically evaluate differences between the nightmare dreams and the confabulated nightmares. The nightmares differed at a significant level (Table 2) from the confabulated nightmares in such a way as to indicate that the latter were distinct phenomena from dreams reported by the subjects as frightfully awakening them from sleep. Confabulated nightmares were higher than reported nightmares in the variables of aggression ($p = 0.01$), movement on the activity subscale, elements of intensity, misfortune (all $p < 0.01$), indoor settings ($p < 0.02$), and color ($p < 0.05$). There were fewer confabulated nightmares with elements of friendliness ($p < 0.01$). Word length was shorter ($p < 0.001$), for the confabulated reports ($\bar{X} = 89$ words) than the nightmares ($\bar{X} = 193$ words) and the latter did not differ from the dreams ($\bar{X} = 209$ words).

DISCUSSION

Nightmare themes statistically differed from those of dreams as evaluated by content analysis. In nightmares there were more frequently catastrophies, physical activity by the dreamer in flight or fight, and acting out of aggressive impulses, contrasted to predominantly friendly social interactions in the dreams. More elements of nightmares were described in color, and more scenes transpired within rooms of institutional, residential, and vocational buildings. The incidence of apprehension and anxiety concerning castration or mutilation was greater in the nightmares.

A trend of historical evolution[19] that has occurred over the centuries is the alteration in content elicited from nightmare reports. Writings of the Middle Ages described the frequent appearance of witches, demons, devils and other sinister characters in nightmare dreams.[4,30] According to an aggregate of more currently available sources that are comprised predominantely of clinical case examples or qualitative content classifications applied to frightening mentation causing awakening in psychophysiology laboratory studies,[3,14] themes pervading twentieth century nightmares[19] represent enclosure in unpleasant surroundings,[4] dread[30] aggression, anxiety, violence,[1] death, injury, and social embarrassment.[18] If nightmares occur in children and adults, in healthy persons and in mentally ill individuals, which of the above features do these dreams have in common? The intense anxiety of overwhelming magnitude and the threat of actual violent assault directed at the dreamer are hypothesized[5] to be the few such fundamental features.

The present results extend findings on the nightmare phenomenon beyond the hypothetical realm to a more intricate and a wider array of content variables than reported in any previous study.[1,3,4,14,18] Content analysis in this investigation provided a reasonably direct empirical confirmation encompassing most of the present impressionistic information about nightmare dream content derived largely by clinical intuition or based upon ad hoc criteria. Discrete nightmare content was delineated by the theoretical castration anxiety scale, and this attests to its usefulness as a measure applied in transverse studies of dreams.[31]

Two possibilities can be considered to explain what actually instigated the content obtained after nightmare awakenings. First is a psychogenic factor that lowers ego defenses during sleep, allowing the emergence of mental activity, and perhaps expressing emotional conflict[5] that is otherwise repressed. The assumption here is that mental activity associated with the emanation of intense affect occurs in sleep immediately preceding the nightmare awakening. It could be contended[7] that any dream content elicited from a nightmare may have developed during or after the arousal from sleep and not before. Extending a previous conceptualization,[7] the possibility exists that the subjective experiences (content) specific to the nightmares are attributable to abnormally accelerated physiologic responses during the awakening episode, e.g., electrodermal activation and tachycardia producing anxiety or terror. This formulation is similar to the James-Lange theory of emotions,[1] the person is afraid because he runs, is in terror because his heart beats fast. The subjects may have elaborated mental content post hoc as a consequence of physiologic arousal rather than as a cause of it.

Can it be assumed that the nightmare reports were not actually hypnopompic artifacts representing content experienced during or subsequent to awakening? The imaginary content elicited by the nightmare demand characteristics treatment differed significantly from nightmares reported by the actual subjects. It is readily apparent from Table 2 that the nightmares and fabricated waking nightmare fantasies were generally diametrically opposed to the nightmares and the dreams. It should be recognized that the purpose of quasi-control (simulating) subjects was not primarily to be a comparison with the actual subject sample, but served in clarifying the adequacy of the research procedure as recommended by Orne.[23]

The observed content differences between dreams and nightmares might be partially attributable to differences in the sleep stages from which the reports were recalled.[27] Generally, the manifest content of mental anxiety accompanying REM sleep is characterized by more anxiety, physical activity, violence-hostility, and visual imagery than nonrapid eye movement (NREM) mentation.[13,32] Nightmares, therefore, appear to more closely resemble REM mentation. Correspondingly, Fisher et al.[1] observed that an overwhelming percentage of reported nightmares in the general population are recalled from REM periods. The frightening dream content that presumably precipitated arousal appeared to emerge from a complex development of mental activity during sleep resembling qualitatively the previously described highly elaborate, clearly recalled, prolonged REM nightmare.[1]

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